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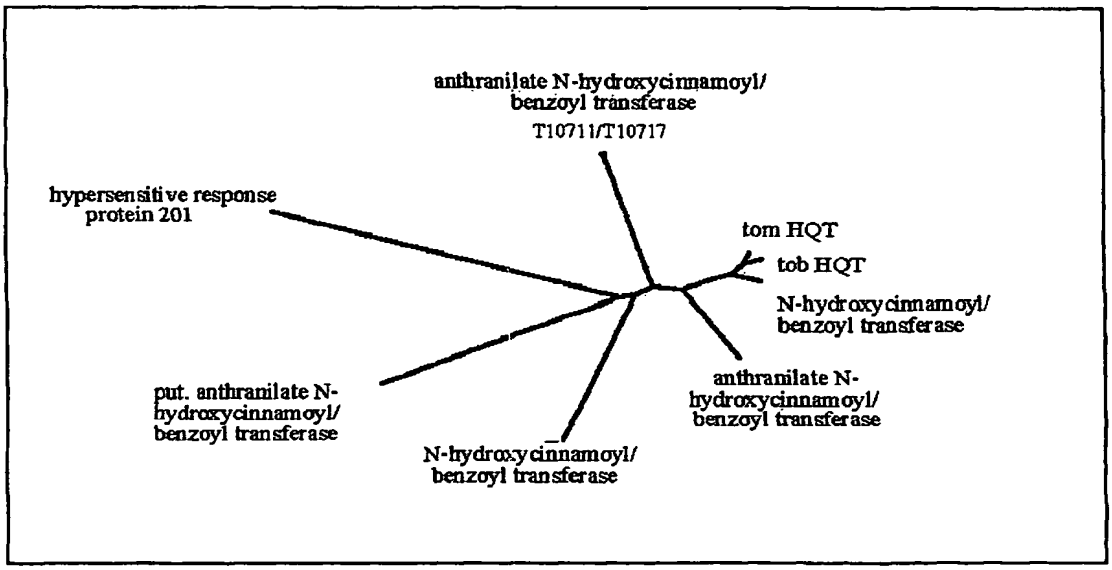
(54) Title: PLANT-DERIVED TRANSFERASE GENES



(57) Abstract: The invention discloses methods for controlling chlorogenic acid synthesis by manipulation of hydroxycinnamoyl-CoA quinate hydroxycinnamoyl transferase (HQT) genes. Isolated nucleic acids encoding HQT and methods for their use are provided. Preferred embodiments are the nucleotide sequences which encode the polypeptide sequences of Fig 3 (sequences of Fig 7). Also provided are variant sequences (*e.g.* alleles and orthologues) and complementary sequences, plus vectors, host cells and plants. Methods of the invention include the use of nucleic acids to express or down-regulate HQT in plant cells and plants. The methods may be used to alter one or more characteristics in a plant *e.g.* texture, flavour and antioxidant properties.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N9/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EMBL, BIOSIS, SEQUENCE SEARCH, MEDLINE, EMBASE, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL 'Online! EBI; 27 November 1999 (1999-11-27) KIKUCHI Y. ET AL.: "Ipomoea batatas hcbt mRNA for N-hydroxycinnamoyl / benzoyltransferase, complete cds." Database accession no. AB035183 XP002256044 cited in the application see sequence ---	1-35
X	DATABASE SWISSPROT 'Online! 1 May 2000 (2000-05-01) "Ipomoea batatas N-hydroxycinnamoyl/benzoyltransferase" Database accession no. Q9SST8 XP002256045 cited in the application see sequence --- -/--	1-35

[X] Further documents are listed in the continuation of box C. [ ] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
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Date of the actual completion of the international search	Date of mailing of the international search report
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	LOTFY SAMIA ET AL: "Hydroxycinnamoyl-CoA: Transferases in higher plants. II. Characterization in Cichorium endivia and Raphanus sativus and comparison with other plants." PLANT PHYSIOLOGY AND BIOCHEMISTRY (MONTROUGE), vol. 32, no. 3, 1994, pages 355-363, XP009018188 ISSN: 0981-9428 cited in the application page 356, column 2, paragraph 2 -page 359, column 2, paragraph 1 ---	1-35
X	RHODES M J C ET AL: "PURIFICATION AND PROPERTIES OF HYDROXY CINNAMOYL COENZYME A QUINATE HYDROXY CINNAMOYL TRANSFERASE FROM POTATOES" PHYTOCHEMISTRY (OXFORD), vol. 18, no. 7, 1979, pages 1125-1130, XP009018193 ISSN: 0031-9422 cited in the application the whole document ---	1-35
X	RHODES M J C ET AL: "THE ENZYMIC CONVERSION OF HYDROXY CINNAMIC ACIDS TO P COUMARYL QUINIC-ACID AND CHLOROGENIC-ACID IN TOMATO FRUITS" PHYTOCHEMISTRY (OXFORD), vol. 15, no. 6, 1976, pages 947-951, XP009018190 ISSN: 0031-9422 the whole document ---	1-35
X	LOTFY SAMIA: "Inactivation and kinetic characterization of hydroxycinnamoyl-CoA: Hydroaromatic acid O-hydroxycinnamoyltransferases from Cichorium endivia and Phoenix dactylifera." PLANT PHYSIOLOGY AND BIOCHEMISTRY (MONTROUGE), vol. 33, no. 4, 1995, pages 423-431, XP009018186 ISSN: 0981-9428 page 429, column 2, paragraph 5 -----	1-35